

C1 (b) a modular optical inspection system disposed proximate a cooling stage of the plurality of interrelated integrated circuit manufacturing tools, the modular optical inspection system including

a plurality of modular inspection subsystems each configured to detect defects on a portion of a semiconductor wafer,

a mechanism for moving at least one of the semiconductor wafer and the plurality of modular inspection subsystems with respect to one another, and

a master processor configured to process data delivered from at least some of the modular inspection subsystems, wherein a first one of the plurality of modular inspection subsystems includes a local processor configured to process data collected by the first modular inspection subsystem; and

(c) a handling tool for moving the semiconductor wafers among the plurality of manufacturing tools and the inspection system.

C2 4. (Once Amended) The integrated circuit manufacturing system of claim 1 [3], wherein the modular optical inspection system is disposed above a window of one of the integrated circuit manufacturing tools.

6. (Twice Amended) In an integrated circuit manufacturing system including a plurality of interrelated integrated circuit manufacturing tools capable of operating in parallel on a plurality of semiconductor wafers, a method of inspecting a semiconductor comprising:

C3 transferring the semiconductor wafer from one of the plurality of manufacturing tools to a modular optical inspection system that is disposed above a window of a cooling tool of the plurality of interrelated integrated circuit manufacturing tools, the modular optical inspection system including a plurality of modular inspection subsystems each configured to detect defects on a portion of the semiconductor wafer, wherein the plurality of manufacturing tools comprise a cluster tool; and

moving at least one of the semiconductor wafer and the plurality of modular inspection subsystems with respect to one another such that each of the modular inspection subsystems inspects, in a single pass across the semiconductor wafer, an associated region of the semiconductor wafer.

CH 17. (Twice Amended) A modular optical inspection system for inspecting a surface, the inspection system comprising: